

## ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE REGULATORY CONTACT RECORD

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**Date/Time:** March 11, 2002; 12:15

**Site Contact(s):** Kathy Zbryk  
**Phone:** (303) 966-6647

**Regulatory Contact:** James Hindman  
**Phone:** (303) 692-3345

**Agency:** CDPHE

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**Purpose of Contact:** Revised Absorption of Criticality Drain Oil

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### Discussion

This contact record serves as update to the contact record issued on December 10, 2001 regarding the absorption of criticality drain oil using Nochar Petro Bond<sup>TM</sup>. After performing in-situ solidification of criticality drain oil while the criticality drain was still attached to the glovebox, it has been determined that cutting the criticality drain off of the glovebox and then absorbing the oil may be a more expeditious and effective method. Based on previous discussions, the revised methodology could be considered generator treatment pursuant to 6 CCR 1007-3, §100.21 (d). Treatment would be performed to remove free liquid in order to meet WIPP WAC and not to meet LDR treatment standards; no EPA codes will be removed as a consequence of the process. Since no treatment standards are being met, an integrated work control package has been developed for performing this work and characterization is documented therein. In conclusion, 707 environmental compliance would like approval to commence with this treatment using the integrated work control package.

Pursuant to our conversation on March 11, 2002, this contact and the attached standard work package serve as sufficient information to approve the revised oil solidification process.

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**Contact Record Prepared By:** Kathy Zbryk

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**Required Distribution:**

R. DiSalvo, RFFO  
S. MacCleod, RFFO  
J. Legare, RFFO  
G. Schuetz, RFFO  
G. Nishimoto, RFFO  
N. Newell, CDPHE  
S. Gunderson, CDPHE  
E. Kray, CDPHE  
J. Hindman, CDPHE  
T. Rehder, USEPA  
P. Arnold, K-H 371  
T. Hopkins, K-H 707/776  
C. Gilbreath, K-H 771  
S. Nesta, K-H RISS

G. Scott, K-H  
D. Shelton, K-H  
K. North, K-H ESS  
J. Berardini, K-H MS  
C. Deck, K-H  
A. Rosenman, K-H ESS  
J. Mead, K-H ESS  
D. Johnson, K-H ESS  
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**Additional Distribution:**

S. Dahlgren, K-H 707/776  
V. Pizzuto, 707  
P. Sasa, 707  
J. Carranco, 707  
R. Caulfield, 707  
G. Martinez, 707  
T. Baker, 707  
R. Bloom, 707  
K. Zbryk, 707



# ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

## STANDARD WORK PACKAGE COVER SHEET

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SWP NO. 707-21002-00

WORK PROCESS NO. \_\_\_\_\_

REVISION NO. 0

TITLE: Solidify and Isolate Crit. Drain Oil Seals and Force Transmitter Seal Assemblies with NOCHAR on Gloveboxes/Chainveyors in Bldg. 707 Facility Complex.

Planner: Steve Basehore / x2055, p2040 / \_\_\_\_\_ / \_\_\_\_\_  
Name Signature Date

### CONCURRENCE:

Based on my personal review, I agree that the work described in this package meets technical requirements under my cognizance, and contains the controls form the JHA.

Responsible: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
 Organization Name Signature Date

H&S: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
Name Signature Date

Engineering: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
Name Signature Date

Rad Safety: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
Name Signature Date

Crit Safety: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
Name Signature Date

Nuc Safety: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
Name Signature Date

Environmental Compliance: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
Name Signature Date

Waste: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
Name Signature Date

Fire Protection: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
Name Signature Date

Config. Control: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
 Authority Name Signature Date

Quality: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
Name Signature Date

Facility Mgr: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
 (or designee) Name Signature Date

ISR: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
 (Review Only) Initials ISR Meeting No. Date

### APPROVAL:

Based on my personal review, and the concurrence of the above technical experts, I agree that the work described in this package meets technical requirements, can be performed safely and contains all of the required controls from the JHA.

Responsible: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
 Manager (Rep) Name Signature Date





**Section 2**  
**TABLE OF CONTENTS/LIST OF EFFECTIVE PAGES**

<b><u>SECTION</u></b>	<b><u>TITLE</u></b>	<b><u>PAGE NO.</u></b>	<b><u>REV.</u></b>
1.	Work Package Cover Sheet .....	1-2 .....	0
2.	Table of Contents/List of Effective Pages .....	1 .....	0
3.	Work Process Form .....	1 .....	0
4.	Engineering Drawings and Specifications .....	1-2 .....	0
5.	List of Required Drawings and References .....	1 .....	0
6.	Material Requirements .....	N/A	
7.	List of Special Tool Requirements/PPE/Training .....	1 .....	0
8.	Initial Conditions/Prerequisites .....	1-4 .....	0
9.	Specific Task Instructions .....	1 .....	0
10.	Post Work Testing Instructions .....	1 .....	0
Appendix 1 .....	Hazard & Discipline Identification Tool Checklist (HDIT) / Job Hazard Analysis (JHA)		
Appendix 2 .....	WP Status Log		
Appendix 3 .....	Miscellaneous And Field Generated Paperwork Record		
Appendix 4 .....	Pre-Evolution Briefing (PEB) Record		
Appendix 5 .....	Post Job Review (PJR) Checklist & Instructions		
Appendix 6 .....	Criticality Drain Seal Solidification Instructions		
Appendix 7 .....	Force Transmitter Seal Solidification Instructions		
Appendix 8 .....	Criticality Drains in Building 707 (Table/List)		

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Section 3  
**WORK PROCESS FORM**

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Section 4  
**ENGINEERING DRAWINGS / SPECIFICATIONS**

**Section 5**

**LIST OF REQUIRED DRAWINGS AND REFERENCES**

**PERFORMANCE REFERENCES**

REF/DRAW NO	DESCRIPTION	REV. #	EFFECTIVE
4-B22-FO-0010	707 Glovebox Operations	2	02/29/00
4-P14-FO-0020	Chainveyor Operations, Bldg. 707	0	03/01/95
11876-0003	Criticality Drains for Mechanical Gloveboxes/chainveyors Cover Plate and Type 3 Crit. Drain Installation	K	07/18/01
20371-19	Force Transmitter Seal Assembly	A	10/21/71

**DEVELOPMENTAL REFERENCES**

REF/DRAW NO	DESCRIPTION	REV. #	EFFECTIVE
MAN-071-IWCP	Integrated Work Control Program Manual.....	3	10/30/00
MAN-066-COOP	Site conduct Of Operations Manual.....	1	10/30/00
MAN-072-OS&IH PM	Occupational Safety & Industrial Hygiene Program Manual.....	0	02/15/01
1-PRO-079-WGI-001	Waste Characterization, Generation and Packaging.....	3	12/21/00
3-PRO-165-RSP-07.02	Contamination Monitoring Requirements.....	0	02/17/98
PRO-872-HSP-31.15	Control of Generated Flammable Gas.....	2	12/20/00
MAN-094-TPM	Training Program Manual.....	1	05/15/01
MAN-102-SRCM	Radiological Control Manual.....	1	10/15/00
3-PRO-229-RSP-01.01	Radiological Work Permit.....	0	03/10/98
3-PRO-160-RSP-04.02	Air Sampling.....	1	02/22/99
PRO-536-BCPR	Beryllium Characterization Procedure.....	0	09/01/99
OO-707/776-001	Building 707/776/777 Implementation of the Site CBDPP.....	0	05/14/01
PRO-267-RSP-09.05	Radiological Characterization For Surface Contaminated Objects.....	2	05/04/01

**LESSONS LEARNED**

The LL/GI database has the following lessons learned are applicable to this activity:

SD-98-1197    Loss of Negative Pressure in Glovebox 226, Room 157  
SD-96-0849    Equipment-Criticality Drain Broken Off Glovebox

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**Section 7**

**7 LIST OF SPECIAL TOOL REQUIREMENTS/PPE/TRAINING**

**7.1 SPECIAL TOOLS REQUIRED**

As required by Job Supervisor:

- \_\_\_\_\_
- \_\_\_\_\_

**7.2 RWP PERSONNEL PROTECTIVE EQUIPMENT (PPE)**

- Cotton liner
- Rubber gloves
- Shoe covers
- Rubber overshoes
- Anti-C coveralls
- SARANEX sleeves and Viton gloves when potential for liquid releases

Additional RWP PPE as listed:

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**NOTE:** *PPE listed is the minimum required. Additional PPE may be added and documented with Industrial Health & Safety and Radiological Safety concurrence.*

**7.3 PERSONNEL PROTECTIVE EQUIPMENT (PPE)**

Additional PPE as identified by Job Supervisor:

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**7.4 TRAINING REQUIREMENTS**

The following may be required for some or all of the workers depending on the task being performed.

Job Supervisor SHALL list additional specialized training below:

Additional Specialized Training as listed:

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## Section 8

### 8 INITIAL CONDITIONS/PREREQUISITES

#### 8.1 PURPOSE:

The purpose of this Standard Work Package is to provide instructions for solidifying the oil using NOCHAR in criticality drain seals and force transmitter seals on Building 707 gloveboxes/chainveyors. These seals can then be isolated and removed as required to support glovebox/chainveyor removal operations.

#### 8.2 SCOPE:

- Measure NOCHAR powder and place inside plastic bags.
- Remove drip pans from the criticality drain.
- Install plastic bags around criticality drain and/or force transmitter seal assembly on glovebox/chainveyor.
- Solidify the criticality drain oil seal and/or force transmitter seal assembly using NOCHAR.
- Isolate and remove criticality drain from glovebox/chainveyor.
- Isolate force transmitter seal assembly on glovebox.

**NOTE:** *This solidification methodology cannot be applied to intact J-type criticality drains, only cup-type criticality drains.*

#### 8.3 PRECAUTIONS AND LIMITATIONS

- 8.3.1 Construction, inspection and removal of scaffolding **SHALL** be performed in accordance with (IAW) MAN-072-OS&IH PM Chapter 40 and logged into the "Work Package Status Log", Appendix 2.
- 8.3.2 Any work on ladders will be evaluated by IH&S IAW OS&IH PM Ch. 39.
- 8.3.3 Glovebox decontamination and encapsulation should be performed inside glovebox/chainveyor prior to removing criticality drain.
- 8.3.4 All waste shall be disposed of in accordance with Waste Generating Instruction (WGI) applicable for the given waste stream. Approved waste containers for the waste expected shall be set up and available in accordance with WGI. (Ensure packaging meets HSP 31.15 requirements.)
- 8.3.5 One cubic foot of NOCHAR is considered a combustible fuel package. Appropriate spacing requirements must be maintained equivalent to plastic in accordance with PRO-1322-707/778-FIRE-INSP, Building 707/778 Weekly and Monthly Fire Safety Inspections. Use in ventilated area. Dispose criticality drains solidified with NOCHAR in vented waste containers.
- 8.3.6 Avoid generating dust clouds when handling NOCHAR powder.
- 8.3.7 IH&S should be notified to perform sound level monitoring to determine noise level controls. Anytime a power tool or a device is used that renders the LSDW system inaudible OPS ORDER OO-707-210, LIFE SAFETY/DISASTER WARNING (LS/DW) SYSTEM SUPERVISORY MUSIC INAUDIBLE/LOSS COMPENSATORY MEASURES and PRO-1426-707-776-CRIT-COMP, CAAS ANNUNCIATION DEFICIENCY COMPENSATORY MEASURES, BUILDINGS 707/776/777 will be in effect.

**Section 8**

**8.4 PRELIMINARY ACTIONS**

**8.4.1 ENGINEERING**

Identify below all system interactions related to this activity.

Continued interaction with glovebox ventilation.

**ENGR**

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**8.4.2 CSO / CSE**

The criticality drain(s) is not required per applicable CSOL(s) for glovebox(es)/chainveyor(s) identified on Work Process Form.

**CSO/CSE**

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**8.4.3 CCA**

List below the applicable BIO/TSR Section(s) and their remedial actions.

**CCA**

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**NOTE:** *All subsequent Steps in Section 8.4 of the Work Package may be worked in any order, as determined by the Job Supervisor.*

**8.4.4 JOB SUPERVISOR**

Perform the following:

- A. Perform a walkdown to ensure the hazards and controls listed on the JHA are accurate for this work. The JHA is located in Appendix 1.

- B. Ensure required personnel are trained and qualified in accordance with the requirements of Section 7, "Training Requirements" and the Job Hazard Analysis (JHA) in Appendix 1 that indicate "Training Required".

- C. Verify that all necessary Special Tools/PPE/Safety Equipment, per Section 7, "Special Tools" and "PPE" are available for the job.

- D. A copy of the current Material Safety Data Sheets (MSDS) has been reviewed and inserted into Appendix 3 for all chemicals involved in performance of this procedure.

## Section 8

- E. Ensure a Crates/Drums Request Form has been completed and submit to Waste Management office in T-707C (a copy inserted into Appendix 3.)
- F. Ensure that the Waste Generating Instructions (WGI) has been obtained and a Waste Stream Worksheet has been completed and inserted into Appendix 3. Obtain criticality drains characterization from the table located in Appendix 8. The Force Transmitter Seal Assemblies are characterized as non-hazardous waste.
- G. Ensure the Respiratory Protection Selection On-The-Job Verification Worksheet has been completed per MAN-O72-OS&IH PM Ch.31 and inserted into Appendix 3.
- H. Request SCO Characterization Plan from Radiological Engineering. SCO Characterization Plan and appropriate surveys must be completed prior to disposal of waste. (N/A if not required).

#### 8.4.5 NUCLEAR SAFETY

Review and concur to Steps 8.4.1 and 8.4.3; and complete a safety evaluation per PRO-664-NSP-USQP. Document the evaluation in Appendix 3. Review JHA in Appendix 1 for any additional hazards/controls.

NUC SAFETY \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
 Print Name Signature Date

#### 8.4.6 RADIOLOGICAL ENGINEERING (RE)

Verify that the ALARA Job Review is the most current revision and has been approved for use. (N/A if not required.)

Review # \_\_\_\_\_

RE \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
Print Name Signature Date

#### 8.4.7 RADIOLOGICAL OPERATIONS / JOB SUPERVISOR

Verify that the Radiological Work Permit (RWP) is the most current revision and has been approved for use.

RWP # \_\_\_\_\_

**RAD OPS** \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
 Print Name Signature Date

**Section 8**

**8.4.8 INDUSTRIAL HYGIENE & SAFETY (IH&S)**

Perform the following, as applicable, and insert documentation into Appendix 3. Ensure new hazards and controls are incorporated into the JHA: (N/A, if Not Applicable.)

**A. Beryllium Work Form.**

- B. Perform pre-job Beryllium contamination survey at the locations and establish the necessary controls for personnel protection and the work area. Document the required controls below and verify that the surveys and controls have been completed.**

Controls:

**IH&S** \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
Print Name Signature Date

**Section 9**

**9 SPECIFIC TASK INSTRUCTIONS**

**9.1 PRELIMINARY ACTIONS**

**9.1.1 CONFIGURATION CONTROL AUTHORITY**

All required signatures on the cover page have been obtained, all initial conditions and prerequisites have been completed and authorization is given to commence work.

CCA \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
Print Name Signature Date

**NOTES:** Sections 9.2 and 9.3 may be performed independently or in conjunction with other section.

**9.2 WORK ACTION STEPS FOR CRITICALITY DRAINS ON GLOVEBOXES/CHAINVEYORS**

**9.2.1 JOB SUPERVISOR**

Proceed to Appendix 6 "*Criticality Drain Seal Solidification Instructions*" and perform steps, as applicable, for each criticality drain to be solidified, isolated and removed.

**9.3 WORK ACTION STEPS FOR FORCE TRANSMITTER SEALS ON GLOVEBOXES/CHAINVEYORS**

**9.3.1 JOB SUPERVISOR**

Proceed to Appendix 7 "*Force Transmitter Seal Solidification Instructions*" and perform steps, as applicable, for each Force Transmitter Seal to be solidified and isolated.

**9.4 WORK TASK COMPLETION REVIEW**

**9.4.1 JOB SUPERVISOR**

A. Review all copies of Appendix 6 and Appendix 7 (as required) to ensure work has been completed.

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B. All work has been completed satisfactorily. Proceed to Section 10 for Post Work Testing requirements.

JOB \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
SUPER Print Name Signature Date

**Section 10**

**10 POST WORK TESTING INSTRUCTIONS**

**10.1 PURPOSE**

Post Work Testing was performed in Section 9. This section is for work package closeout only.

**10.2 PRECAUTIONS AND LIMITATIONS**

None.

**10.3 PREREQUISITES**

None.

**10.4 TASK INSTRUCTIONS**

None.

**10.5 SYSTEM AREA RESTORATION AND WORK PACKAGE CLOSEOUT**

**10.5.1 JOB SUPERVISOR**

Perform the following:

A. Ensure work area is clean.

B. Ensure all generated waste is disposed of per WGI-001.

C. Ensure copies of permits, forms, checklists and reports have been inserted into Appendix 3. (e.g., Rad Work Permit, etc.)

D. Return permits, forms, checklists and reports to the appropriate organization or department. (e.g., Rad Work Permit, etc.)

**10.5.2 JOB SUPERVISOR**

Contact the Planner and complete the Post Job Review Checklist (Appendix 5) per MAN-071-IWCP, Chapter 10.3.1.

**10.5.3 JOB SUPERVISOR**

Perform the following:

A. Ensure all data entered has been checked for accuracy and completeness and that all sections of this work package have been inserted back into this work package.

B. Verify that all tasks have been completed satisfactory.

**JOB** \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
**SUPERVISOR** Print Name Signature Date

**10.5.4 JOB SUPERVISOR**

Return this completed work package to the Responsible Manager for package closeout.

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**Appendix 1**  
**Page 1 of 1**  
**HAZARD AND DISCIPLINE IDENTIFICATION TOOL**

WPF No.:		Title/Description: Solidify and Isolate Crit. Drain Oil Seals and Force Transmitter Seal Assemblies with NOCHAR on gloveboxes/chainveyors in Bldg. 707 Facility Complex.		Date:	
Specific work location: Building 707, Module _____				<b>DISCIPLINE</b>	
Does the work activity:		Yes	No		
1. Occur in a Category 2/3 facility or on a safety class or safety significant SSC credited in an authorization basis?		X		Nuclear Safety	
2. Occur in an area that has or has had radioactive material, radioactive contamination, airborne contamination, or radiation generation devices? Require the unrestricted release of radioactive waste or the characterization of radioactive waste?		X		Radiological Operations/Engineering	
3. Occur in any area that has, has had, or has the potential to contain fissionable material, or involves the movement or handling of nuclear material?		X		Criticality Safety	
4. Require design basis modifications, design or other engineering assistance?		X		Engineering	
5. Occur in a RCRA/CERCLA regulated area? Impact a regulatory permit? Being performed pursuant to RFCA or other federal compliance acts or agreements? Involve disturbance of soils, roads, or foundations? Occur in the buffer zone? Require an Environmental Checklist?		X		Environmental	
6. Create regulated waste, non-routine sanitary, including hazardous, radioactive, and/or mixed?		X		Waste Operations	
7. Occur in an area that has a potential to impact security area controls and/or systems? Involve classified information? Involve special nuclear material?			X	Safeguards & Security	
8. Have the potential to expose the worker to occupational safety or industrial hygiene related hazards that are identified in the Occupational Safety & Industrial Hygiene (OS&IH) Program Manual. Examples include: <ul style="list-style-type: none"> <li>• Electrical, mechanical, hydraulic, chemical, physical or biological hazards</li> <li>• Inhalation or dermal exposure to dust, mists, vapors, gases, or fumes</li> <li>• High or uncharacterized noise</li> <li>• Temperature extremes</li> <li>• Asbestos</li> <li>• Beryllium</li> <li>• Elevations</li> <li>• Ergonomic hazards</li> <li>• Confined spaces</li> <li>• Elevated work</li> <li>• Heavy equipment operations</li> <li>• Excavation and trenching</li> </ul>		X		Health and Safety	
9. Involve spark, flame, or heat producing equipment? Involve explosives, flammable gasses, or pyrophoric material? Involves the protection from fires or fire notification (e.g. fire walls, alarms, sprinkler systems, etc)		X		Fire Protection	
10. Includes any activities identified in Chapter 2, Section 3.3, QA Involvement?		X		Quality Assurance	
11. Involves the packaging or transportation of materials within a building or movement of materials or waste outside of a building?			X	Packaging & Transportation	

### JOB HAZARD ANALYSIS

WPF/Procedure No.:	Title/Description: Solidify and Isolate Criticality Drain Oil Seals and Force Transmitter Seal Assemblies with NOCHAR on Gloveboxes/Chainveyors in Bldg. 707 Facility Complex.		Date: 12/19/01
Company/Organization KH / Maintenance	Location: Bldg. 707, Module _____		Page 1 of 4
Team Leader (Name / Signature / Date)	Planner (Name / Signature / Date)	H&S (Name / Signature / Date)	
Engineering (Name / Signature / Date)	Radiological Ops/Engineering (Name / Signature / Date)	Quality Assurance (Name / Signature / Date)	
Criticality Safety (Name / Signature / Date)	Nuclear Safety (Name / Signature / Date)	Environmental (Name / Signature / Date)	
Waste Operations (Name / Signature / Date)	Fire Protection (Name / Signature / Date)	Packaging & Transportation (Name / Signature / Date)	
Safeguards & Security (Name / Signature / Date)	Lead Craft / Operator (Name / Signature / Date)	Other (Organization / Name / Signature / Date)	
Other (Organization / Name / Signature / Date)	APPROVED: RM (Name / Signature / Date / Organization)		

Signature indicates participation in the JHA. RM approval indicates that the SMEs are competent to perform their function. RM approval also indicates that the controls are synergistic and the implementation of a control has not created or amplified another hazard.

**APPENDIX 1, Rev.0**  
**JOB HAZARD ANALYSIS**

(Effective 05/04/01)

## Continuation Sheet

WPF/Procedure No.:	Title/Description: Solidify and Isolate Criticality Drain Oil Seals and Force Transmitter Seal Assemblies with NOCHAR on Gloveboxes/Chainveyors in Bldg. 707 Facility Complex.		Date: 12/19/01
Company/Organization KH / Maintenance	Location: Bldg. 707, Module		Page 2 of 4
<b>BASIC JOB STEP</b>		<b>POTENTIAL HAZARD</b>	<b>REQUIRED CONTROLS</b>
Measure NOCHAR into plastic bags.	<ul style="list-style-type: none"> <li>Combustible fuel package if greater than 1 cubic foot.</li> <li>Hydrogen generator in the presence of Plutonium.</li> </ul>	<ul style="list-style-type: none"> <li>Treat NOCHAR as equivalent combustible load to plastic. Maintain less than 1 cubic foot of NOCHAR (cumulative) within a 5 foot distance of other combustibles, radioactive materials, and ignition sources.</li> <li>Use in ventilated area to remove Hydrogen gasses.</li> <li>Dispose of criticality drains solidified with NOCHAR in vented waste containers.</li> </ul>	
Remove crit-drain drip pans.	<ul style="list-style-type: none"> <li>Cuts to hands.</li> </ul>	<ul style="list-style-type: none"> <li>Cut resistant gloves shall be worn, as required.</li> </ul>	
Secure the plastic bags around crit-drain.	<ul style="list-style-type: none"> <li>Possible Exposure to Radiological Contamination.</li> </ul>	<ul style="list-style-type: none"> <li>Follow RWP</li> <li>RCT shall verify all contamination containments as required.</li> </ul>	
Unlatch the crit-drain shroud cover and open. If necessary remove cover.	<ul style="list-style-type: none"> <li>Cuts to hands.</li> <li>Possible release and contact with small amount of oil from crit-drain.</li> <li>Possible Exposure to Radiological Contamination.</li> </ul>	<ul style="list-style-type: none"> <li>Cut resistant gloves shall be worn, as required.</li> <li>Follow RWP</li> <li>SARANEX PPE shall be worn as directed by Radiological Operations.</li> </ul>	
Bag in operations for NOCHAR bag into the glovebox.			
Remove the crit-drain cover inside the glovebox.	<ul style="list-style-type: none"> <li>Cuts to hands.</li> </ul>	<ul style="list-style-type: none"> <li>Cut resistant gloves shall be worn, as required.</li> </ul>	

**APPENDIX 1, Rev.0  
JOB HAZARD ANALYSIS**

(Effective 05/04/01)

## Continuation Sheet

WPF/Procedure No.:	Title/Description: Solidify and Isolate Criticality Drain Oil Seals and Force Transmitter Seal Assemblies with NOCHAR on Gloveboxes/Chainveyors in Bldg. 707 Facility Complex.		Date: 12/19/01
Company/Organization KH / Maintenance	Location: Bldg. 707, Module		Page 3 of 4
<b>BASIC JOB STEP</b>		<b>POTENTIAL HAZARD</b>	
<b>REQUIRED CONTROLS</b>			
Open the bag of NOCHAR inside the glovebox and add the NOCHAR powder into the crit-drain.			
At the crit-drain location outside the glovebox, add the NOCHAR powder into the crit-drain. Using the mixing tool stir the NOCHAR into the oil.	<ul style="list-style-type: none"> <li>Possible release and contact with small amount of oil from crit-drain.</li> <li>Possible Exposure to Radiological Contamination.</li> </ul>	<ul style="list-style-type: none"> <li>Apply NOCHAR material to absorb any spills.</li> <li>SARANEX PPE shall be worn as directed by Radiological Operations.</li> <li>Follow RWP.</li> </ul>	
Bag sleeve crit-drain at the cut location. Cut and remove crit-drain from glovebox.	<ul style="list-style-type: none"> <li>Possible Exposure to Radiological Contamination.</li> <li>Cuts to hands.</li> <li>LS/DW Impairment (High Noise Area).</li> </ul>	<ul style="list-style-type: none"> <li>Follow RWP</li> <li>RCT shall verify all contamination containments as required.</li> <li>Cut resistant gloves shall be worn, as required.</li> <li>Appropriate hearing protection. IH&amp;S to perform sound level monitoring.</li> <li>Follow compensatory measures per Operations Order OO-707-210, and PRO-1426-707-776-CRIT-COMP.</li> </ul>	
Install containment for Force Transmitter Seal Solidification.	<ul style="list-style-type: none"> <li>Personnel injuries resulting from slips, trips and falls.</li> <li>Possible Exposure to Radiological Contamination.</li> </ul>	<ul style="list-style-type: none"> <li>IH&amp;S to evaluate ladder use.</li> <li>Set up barriers/signs around work areas, as required.</li> <li>Follow RWP</li> <li>RCT shall verify all contamination containments as required.</li> </ul>	

**APPENDIX 1, Rev.0  
JOB HAZARD ANALYSIS**

(Effective 05/04/01)

## Continuation Sheet

WPF/Procedure No.:	Title/Description: Solidify and Isolate Criticality Drain Oil Seals and Force Transmitter Seal Assemblies with NOCHAR on Gloveboxes/Chainveyors in Bldg. 707 Facility Complex.		Date: 12/19/01
Company/Organization KH / Maintenance	Location: Bldg.707, Module		Page 4 of 4
<b>BASIC JOB STEP</b>		<b>POTENTIAL HAZARD</b>	<b>REQUIRED CONTROLS</b>
Remove the component from force transmitter assembly to expose oil reservoir.	<ul style="list-style-type: none"> <li>Possible Exposure to Radiological Contamination.</li> <li>Possible release and contact with small amount of oil from force transmitter seal.</li> </ul>	<ul style="list-style-type: none"> <li>Follow RWP.</li> <li>SARANEX PPE shall be worn as directed by Radiological Operations.</li> <li>Apply NOCHAR material to absorb any spills.</li> </ul>	
Open the bag of NOCHAR inside the containment and add the NOCHAR powder into the Force Transmitter Seal. Using the mixing tool stir the NOCHAR into the oil.	<ul style="list-style-type: none"> <li>Possible Exposure to Radiological Contamination.</li> <li>Possible release and contact with small amount of oil from force transmitter seal.</li> </ul>	<ul style="list-style-type: none"> <li>Follow RWP.</li> <li>SARANEX PPE shall be worn as directed by Radiological Operations.</li> <li>Apply NOCHAR material to absorb any spills.</li> </ul>	
Reassemble components back onto force transmitter assembly.	<ul style="list-style-type: none"> <li>Possible Exposure to Radiological Contamination.</li> </ul>	<ul style="list-style-type: none"> <li>Follow RWP.</li> </ul>	
Seal remaining containment over Force Transmitter Assembly by applying a heavy layer of tape.	<ul style="list-style-type: none"> <li>Possible Exposure to Radiological Contamination.</li> </ul>	<ul style="list-style-type: none"> <li>Follow RWP.</li> <li>RCT shall verify all contamination containments as required.</li> </ul>	
<p>Note: the fourth column is not required, but <b>may</b> be used to identify the location of the controls if desired.</p>			

**WPF#:**

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## Appendix 2

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## WP STATUS LOG

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**Appendix 2**  
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**WP STATUS LOG**

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**Appendix 4**  
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**PRE-EVOLUTION BRIEFING RECORD**

Evolution Description: \_\_\_\_\_

Evolution Supervisor: \_\_\_\_\_

A. \*Date/Time of PEB: \_\_\_\_\_

B. \*Applicable Procedure Number/Work Package Number: \_\_\_\_\_

C. \*Personnel Attending (Filled-in here, or attach an attendance roster):

NAME	EMPLOYEE #	PROJECT	NAME	EMPLOYEE #	PROJECT
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Briefing Check-Off List:

INITIALS

- |  |       |
|--|-------|
| 1. The evolution is scheduled on the POD.  | _____ |
| 2. The trainee to instructor ratio is as authorized by the FM.   | _____ |
| 3. Evolution Supervisor has conducted a walkdown for new or complex evolutions if not previously dry-run | _____ |
| 4. Participants have the procedures, work package, or other documents needed.                            | _____ |

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**PRE-EVOLUTION BRIEFING RECORD**

5. The necessary documents are available for use at the PEB and are current (e.g., *CSOL/NMSL*, *Material Safety Data Sheets*, *RWP*, *criticality safety analyses*, etc.).  
\_\_\_\_\_
6. \*Evolution Supervisor briefs changes to procedures that have occurred since the activity was last conducted.  
\_\_\_\_\_
7. Necessary personnel are in attendance. Trainee limitations on operating equipment/taking rounds/making log entries discussed.  
\_\_\_\_\_
8. \*The scope of the evolution to be performed including LO/TO requirements and responsibilities of each individual identified and discussed. Procedure covered in sufficient detail to ensure participants understand the evolution, and their role. If multiple work groups are involved with interfacing activities, specific work scopes, interfacing procedures, and coordination of the groups discussed.  
\_\_\_\_\_
9. \*Current facility conditions, impacts of other evolutions, and impacts of this evolution on ongoing work discussed with SM. Additionally, for nuclear facilities, impacts of this evolution on the AB discussed with the SM  
\_\_\_\_\_
10. The precautions, limitations, initial conditions, and prerequisites were reviewed.  
\_\_\_\_\_
11. Adequate communications equipment available.  
\_\_\_\_\_
12. The required tools and equipment are available.  
\_\_\_\_\_
13. Portable instruments are available (*if required*).  
\_\_\_\_\_
14. Personnel taking, receiving, or transmitting data are familiar with the data requirements.  
\_\_\_\_\_
15. Expected instrument readings discussed (*if applicable*).  
\_\_\_\_\_
16. Appropriate material transfer, and data recording forms are available.  
\_\_\_\_\_
17. \*Discuss expected Item Description Codes (IDC), and action to take if other IDCs are encountered.  
\_\_\_\_\_

**Appendix 4**  
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**PRE-EVOLUTION BRIEFING RECORD**

18. Are hazardous materials involved? [ ] Yes [ ] No  
(if answer is no, continue the briefing check-off list. If yes, complete and discuss Appendix 5, Hazardous Material Release Prevention/Preparedness Checklist, and continue the briefing check-off list). \_\_\_\_\_
19. Hazards associated with the evolution and PPE/safety equipment discussed. Location of eyewash and safety showers, and spill kits discussed (if applicable); heat stress/cold stress briefing per, Occupational Safety & Industrial Hygiene Program Manual Chapter 16 (if applicable). \_\_\_\_\_
20. Waste disposal and applicable sections of the Waste Generating Instruction have been discussed. Waste Generator qualified personnel available. \_\_\_\_\_
21. \*RWP discussed. \_\_\_\_\_
22. ALARA review for new activities discussed. \_\_\_\_\_
23. \*Expected radiological conditions discussed, including contamination and radiation levels. Methods to minimize exposure discussed. \_\_\_\_\_
24. Criticality Safety Evaluation discussed.  
Criticality Safety Officer may assist. \_\_\_\_\_
25. Actions to be taken in the event of emergencies, or upsets, or if any controls are exceeded, discussed (fire, criticality, glovebox overheat, SAAM/CAM alarm, CSOL limits, etc.). \_\_\_\_\_
26. \*Recent problems, changes, lessons learned, and occurrences relative to the evolution discussed. \_\_\_\_\_
27. Potential shift changes, watch reliefs, and breaks discussed. \_\_\_\_\_
28. \*Applicable NMSLs and/or CSOLs discussed. NSM 3.12 assignment made. Reminder made that satisfactory 3.12 is reported to the Evolution Supervisor prior to activity start, and changes requiring another NSM 3.12 discussed. \_\_\_\_\_
29. Open criticality infractions and deficiencies which impact the evolution discussed. Discuss Material at Risk (MAR) control (if applicable); steps to take if exceeded. \_\_\_\_\_

**Appendix 4**  
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**PRE-EVOLUTION BRIEFING RECORD**

30. Egress procedures and egress routes and assembly areas discussed. \_\_\_\_\_
31. Unique postings in the work area discussed. \_\_\_\_\_
32. Escort requirements discussed and escort assignments made. \_\_\_\_\_
33. Provisions for housekeeping and final cleanup discussed. \_\_\_\_\_
34. \*Open-ended questions asked to ensure participants understand the evolution and are aware of hazards involved, hazard controls, and responses expected during the evolution and procedural compliance requirements. Stop-work authority of individuals discussed. Watches synchronized if applicable. \_\_\_\_\_
35. \*All questions have been adequately answered. \_\_\_\_\_

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\_\_\_\_\_  
Evolution Supervisor Date

\_\_\_\_\_  
Configuration Control Authority Date

\*Required for shortened PEB. See Section 6.3.3.1.

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## POST JOB REVIEW CHECKLIST & INSTRUCTIONS

Work Title: \_\_\_\_\_

Job Supervisor: \_\_\_\_\_ Equipment Name: \_\_\_\_\_

1. Safety Barriers Were Effective
2. PPE Appropriate
3. Hazard Analysis/Mitigation adequate
4. Safety Coordination and Support
5. Pre-job Briefing / Job Task Briefing
6. System or Component Were Ready for Work
7. Plant operating status appropriate
8. System/component operating status appropriate
9. Training identified was complete and appropriate.
10. Support Coverage Was Adequate
  - Environmental
  - Safety, Health
  - Radiation Safety
  - Operations
  - Engineering
  - Maintenance
  - Planning/Scheduling
11. Environmental Barriers Were Effective
  - Hazard analysis/mitigation adequately addressed
12. Work Package Was Adequate
  - Work instruction appropriate
  - Work instructions comprehensive
  - Contributing factors that helped job performance
  - Tools, equipment, and or process
13. Regulatory requirements identified/complied with
14. Other:

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**Appendix 5**  
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**POST JOB REVIEW CHECKLIST & INSTRUCTIONS**

**Comment Section**

Ref. No. (1-12)

Comment/Suggested Improvement


**Personnel Attending:**

<u>Name</u>	<u>Initial</u>	<u>Employee #</u>	<u>Name</u>	<u>Initial</u>	<u>Employee #</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

**PJR Review:**

\_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_  
Responsible Manager Name                      Signature                      Date

☐ Submitted to Lessons-Learned Program. If so, submit the following.

Background:

Lessons Learned:

**Appendix 6**  
**Criticality Drain Seal Solidification Instructions**

**Note:** Make copies of Appendix 6 for each criticality drain location identified on WPF. Record glovebox/chainveyor number in heading below.

**6 CRITICALITY DRAIN SEAL SOLIDIFICATION INSTRUCTIONS**

**FOR GB / CHAINVEYOR:** \_\_\_\_\_

**6.1 ACTIONS**

**6.1.1 RAD OPS**

Perform pre-job contamination and radiation surveys.

<b>RAD</b>	_____ / _____	_____ / _____
<b>OPS</b>	Print Name	Signature                      Date

**NOTE:** 1. Steps 6.1.2.G and H can be performed at any time and must be prior to 6.1.3.A.  
2. SARANEX PPE shall be worn as directed by Radiological Operations.

**6.1.2 CRAFT**

Perform the following:

- A. Measure 1½-pounds (3-Cups, or "pre-measured amount") of NOCHAR into a plastic bag. Place a mixing tool inside with the NOCHAR. Measure ½-pound (1-Cup, or "pre-measured amount") of NOCHAR into another plastic bag. (This ½-pound bag will be poured down the crit-drain from inside the glovebox.)

**WARNING**  
**Sharp edges could be present.**

- B. Use "Cut-Resistant Gloves", as required, to remove the drip pan from crit-drain. Discard drip pan per applicable WGI.

- C. Unlatch the crit-drain top cover, if present, but DO NOT OPEN COVER.

- D. Place the 1½-pound bag of NOCHAR into a heavy-mil plastic bag. Secure this plastic bag around bottom of the crit-drain.

- E. **RCT:** Verify the installation of plastic bag controls.

<b>RAD</b>	_____ / _____	_____ / _____
<b>OPS</b>	Print Name	Signature                      Date

- F. Open the crit-drain cover. Use NOCHAR material to absorb any oil spills inside plastic bags.

- G. Bag into the glovebox the ½-pound bag of NOCHAR.

**Appendix 6**  
**Criticality Drain Seal Solidification Instructions**

**WARNING**  
**Sharp edges could be present.**

- H. Inside the glovebox, use "Cut-Resistant Gloves", as required, to remove the cover that is inserted into the crit-drain.

☐

**NOTE:** *SARANEX PPE shall be worn as directed by Radiological Operations.*

**6.1.3 CRAFT / WASTE INSPECTOR**

Perform the following:

- A. Open the bag of NOCHAR inside the glovebox and add the entire amount of NOCHAR powder into the crit-drain.

☐

- B. At the crit-drain location outside the glovebox, add the NOCHAR powder into the crit-drain up to the edge (this will be one application). Using the mixing tool, stir the NOCHAR into the oil. Continue this process of adding NOCHAR powder and mixing, until no "soupy" mixture adheres to the mixing tool. (Note: There should be at least four applications of NOCHAR to ensure solidification).

☐

- C. **Waste Inspector:** Verify that the solidification of oil performed meets waste acceptance criteria. Document any corrective actions as applicable in Appendix 2.

**WASTE** \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
Print Name Signature Date

**WARNING**  
**Sharp edges could be present.**

**6.1.4 CRAFT / RCT**

Perform the following:

- A. **RCT:** Circle required radiological control(s) to be used for crit-drain removal from glovebox/chainveyor.

Sleeving / Ventilated Hood / Other: \_\_\_\_\_

**RAD** \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
**OPS** Print Name Signature Date

- B. Set up radiological controls as specified by RCT.

☐

- C. **RCT:** Verify the installation of radiological controls.

**RAD** \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
**OPS** Print Name Signature Date

**Appendix 6**  
**Criticality Drain Seal Solidification Instructions**

- D. Use "Cut-Resistant Gloves", as required, to remove crit-drain from glovebox/chainveyor per Job Supervisor's direction. Appropriate hearing protection should be worn when operating portable power tools. IH&S should be notified to perform sound level monitoring. Follow compensatory measures per Operations Order OO-707-210, and PRO-1426-707-776-CRIT-COMP

☐

- E. Seal / contain the opening on glovebox/chainveyor left by crit-drain.

☐

- F. **RCT:** Verify the containment provides appropriate radiological controls.

**RAD**  
**OPS**

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**WARNING**  
**FAILURE TO MAINTAIN LESS THAN 15 GRAMS TOTAL FISSILE MATERIAL PER WASTE CONTAINER,**  
**WILL RESULT IN A CRIT DEFICIENCY.**

- G. Dispose of removed crit-drain per applicable WGI specific to packaging crit-drain with NOCHAR.

☐

- H. IF waste container is not sealed, THEN place 15 Gram warning sign on waste container.  
Warning sign located in Appendix 3. N/A if not applicable.

☐

**6.1.5 JOB SUPERVISOR**

- A. If another crit-drain and/or force transmitter seal assembly work is necessary. Direct D&D crew to continue on next crit-drain (Appendix 6) and/or next force transmitter seal assembly (Appendix 7). (N/A if not required)

☐

- B. If all crit-drain and force transmitter seal work is completed, go to Step 9.4.1. (N/A if not required)

☐

**Appendix 7**  
**Force Transmitter Seal Solidification Instructions**

**Note:** Make copies of Appendix 7 for each Force Transmitter Assembly location identified on WPF. Record glovebox number in heading below.

**7 FORCE TRANSMITTER SEAL SOLIDIFICATION INSTRUCTIONS FOR GB: \_\_\_\_\_**

**7.1 ACTIONS**

**7.1.1 CRAFT**

Ensure the scale has been removed from the top of the Force Transmitter Seal Assembly.

**7.1.2 RAD OPS**

Perform pre-job contamination and radiation surveys.

**RAD** \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
**OPS**                      Print Name                      Signature                      Date

**7.1.3 CRAFT**

Measure approximately 1-pound (approx. 2-Cups, or "pre-measured amount") of NOCHAR into a plastic bag. Place a mixing tool inside with the NOCHAR.

**NOTE:** *IH&S to evaluate ladder use.*

**7.1.4 CRAFT / RCT**

Perform the following:

- A. Set up barriers/signs around work areas, as required. Install containment for Force Transmitter Seal Solidification process IAW with RCT direction. Ensure bag of NOCHAR is placed inside containment.

- B. **RCT:** Verify the containment provides appropriate radiological controls.

**RAD** \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
**OPS**                      Print Name                      Signature                      Date

**NOTE:** *SARANEX PPE shall be worn as directed by Radiological Operations.*

**7.1.5 CRAFT / WASTE INSPECTOR**

Perform the following:

- A. Within the containment, remove these components (as required): clamp bar, hanger, and inner can from assembly to gain access to oil reservoir.

- B. Open the bag of NOCHAR inside the containment and add the NOCHAR powder into the oil reservoir. Using the mixing tool stir the NOCHAR into the oil. Continue adding NOCHAR powder and mixing, until no "soupy" mixture adheres to the mixing tool. Use NOCHAR material to absorb any oil spills.

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**Appendix 7**  
**Force Transmitter Seal Solidification Instructions**

- C. **Waste Inspector:** Verify that the solidification of oil performed meets waste acceptance criteria. Document any corrective actions as applicable in Appendix 2.

**WASTE** \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
Print Name Signature Date

7.1.6 CRAFT

Perform the following:

- A. Reassemble components back onto force transmitter assembly.

- B. Seal / contain the containment onto glovebox over top of Force Transmitter Assembly by applying a heavy layer of tape onto glovebox area.

- C. **RCT:** Verify the containment provides appropriate radiological controls.

**RAD OPS** \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
Print Name Signature Date

- D. Notify Job Supervisor the Force Transmitter Assembly solidification is completed.

7.1.7 JOB SUPERVISOR

- A. If another crit-drain and/or force transmitter seal assembly work is necessary. Direct D&D crew to continue on next crit-drain (Appendix 6) and/or next force transmitter seal assembly (Appendix 7). (N/A if not required)

- B. If all crit-drain and force transmitter seal work is completed, go to Step 9.4.1. (N/A if not required)